

In response to your question regarding uranium contamination in the SAG from Bluewater and its potential interaction with the Homestake Large Tailings Pile (LTP), there are two issues to look at: the location of the SAG with respect to the LTP and the location of the Bluewater uranium plume in the SAG. When these issues are taken into consideration, it can be shown that, though there is some uncertainty regarding whether the Bluewater uranium plume in the SAG may be underneath the LTP, it does not interact with or impact the LTP.

As Bernadette showed on slide 4 the SAG underlies the Main Tailings Disposal Cell at Bluewater. However as you know, as you move east from Bluewater to Homestake, the SAG dips down and the Chinle formation becomes thicker. So much so that, at the Homestake site, in the area of the LTP footprint, the top of the SAG is around 800 feet below ground surface. In the area of the LTP, 650 to 700 feet of the Chinle formation sits atop the SAG and 100 feet of San Mateo Creek alluvium sits atop the Chinle. Given these thicknesses, and the likelihood that the base of the LTP is relatively close to ground-surface elevation, interaction between the SAG and the LTP is highly unlikely. Furthermore, the vertical hydraulic gradient of the groundwater in the area around and immediately north of the LTP is generally downward from the alluvium into the Chinle and the SAG, and not upward from the SAG. Collectively, these observations lead to the conclusion that groundwater in the SAG does not flow upward into the Chinle formation and the alluvial aquifer under the LTP.

You are correct that the 2013 Bluewater uranium plume in the SAG map (Slide 6) shows the 0.03 mg/L contour line just north of the LTP footprint while the 2017 Bluewater uranium plume (Slide 7) shows the 0.03 mg/L contour line intersecting the LTP. Please note that on both maps the contour line is dashed in the vicinity of the LTP footprint, indicating that its location is approximate. This is because there are no SAG wells directly east of well 951R. As shown in Slide 6, 2013 uranium concentrations at Deep Wells #1 and #2 (0.008 mg/L and 0.011 mg/L, respectively), located south and southeast of the LTP, were taken into account when delineating the plume for that year. However, it has since been learned that Deep Wells #1 and #2 have integrity issues and their data are no longer used. Well 951R has remained relatively constant between 2013 and 2017, decreasing slightly from 0.038 mg/L to 0.037 mg/L. The location of the 0.03 mg/L contour in 2017 in the vicinity of well 951R was simply placed a small distance south of its location in 2013 in the interest of being conservative, particularly in light of the absence of concentration data at Deep Wells #1 and #2 in 2017.

Please note that the location chosen for the 0.03 mg/L contour in 2013 and 2017, is an approximation and that its actual location in the vicinity of well 951R and the LTP footprint is unknown. Further, as discussed above, given the depth of the SAG in this area (as discussed above), there is no reason to believe that contamination in the SAG affects the LTP.

The EPA will respond to your e-mail separately.

Please see the slides attached, as requested, and thank you for your participation in the public meeting.

As always, feel free to contact me via phone or e-mail, should you have any additional questions.